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ABSTRACT

This paper reports on a continuing study of Australian Aboriginal and Navajo Indian children. The study investigates the relevance and applicability of goal theory to explaining indigenous minority motivation in school settings. Task, ego social solidarity, and extrinsic goal structures were examined as a means of explaining and predicting minority motivation in school settings. Data on how these groups conceptualize education were obtained through interviews and a questionnaire completed by more than 100 Aboriginal parents and interviews with members of the Navajo community and educators. Aboriginal students (n=496) in grades 7 through 12 in high schools in New South Wales and Navajo students (n=529) in grades 9 through 12 at Window Rock High School on the Navajo Reservation were surveyed with an instrument developed for the study, the Inventory of School Motivation (ISM). Explanatory factor analyses of the ISM offered considerable support to the Personal Investment Model of M. L. Maehr (1984) and supported the predictive power of the ISM as an indicator of student attitudes and performance. Both Aboriginal and Navajo students were highly goal directed. Group leadership and social concern were also important, but some factors previously considered key determinants of poor achievement and dropping out among these students were not found to be very influential. (Contains 4 tables and 42 references.) (SLD)

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**GOAL THEORY AND INDIGENOUS MINORITY SCHOOL MOTIVATION:
RELEVANCE AND APPLICATION**
Australian Aboriginal and Navajo Indian Research

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Abstract

Children from indigenous cultural communities such as the Australian Aboriginal and American Indian appear to be at a particular disadvantage with regard to academic achievement and school retention. Indigenous minority children are often stereotyped as lacking the motivation to achieve and the cognitive processes needed to achieve. It is also believed that they suffer from culture clash in schools which are not suited to their particular motivational orientation.

This paper reports on a continuing study with Australian Aboriginal and Navajo Indian children investigating the relevance and applicability of goal theory to explaining indigenous minority motivation in school settings. In particular it will examine task, ego, social solidarity and extrinsic goal structures as a means of explaining and predicting minority motivation in school settings.

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INTRODUCTION

Research at the classroom and school level suggests that students perceive classrooms as stressing various goals. The goal theory of achievement motivation argues that the goals stressed by schools have dramatic consequences for whether children develop a sense of efficacy and a willingness to try hard and take on challenges, or whether they avoid challenging tasks, giving up when faced with failure (See Ames, 1984, 1992; Covington, 1992; Elliott & Dweck, 1988; Maehr, 1989; Maehr & Midgley, 1991).

Goals are cognitive representations of the different purposes students may have in different achievement situations, and are presumed to guide students' behaviour, cognition, and affect as they become involved in academic work (Ames, 1992; Dweck & Elliott, 1983; Pintrich, Marx & Boyle, 1993; Wentzel et al, 1991). Two goals have received considerable attention from researchers: **mastery goals** (also called learning goals), and **performance goals** (also called extrinsic goals). Central to a mastery goal is the belief that effort leads to success, and the focus of attention is on the intrinsic value of learning. With a mastery goal, individuals are oriented toward developing new skills, trying to understand their work, improving their level of competence, or achieving a sense of mastery. Mastery goals and achievement are "self-referenced". In contrast, central to a performance goal is a focus on one's ability and sense of self-worth. Ability is shown by doing better than others, by surpassing norms, or by achieving success with little effort. Public recognition for doing better than others through grades, rewards and approval from others, is an important element of performance goal orientation. Performance goals and achievement are, therefore, "other referenced". Consequently, "self-worth" is determined by one's perception of ability to perform and compete successfully. Hence, when a student tries hard without being completely successful (in terms of the established norms) his or her sense of self-worth is threatened (Ames, 1992, Covington, 1992; Dweck, 1986; Nicholls, 1989).

Implicit in both mastery and performance goals is a focus on individualism where priority is given to the goals of individuals. There is little emphasis on collectivism which reflects an emphasis on group goals and affiliation (Kagitcibasi & Berry, 1989; Triandis et al, 1993; Schwartz, 1990). There is little attention paid to group orientations such as working to preserve in-group integrity, interdependence of members and harmonious relationships. Furthermore, the bipolar mastery versus performance continuum, while giving us valuable insights into some aspects of the motivational process and the ways in which schools may emphasise one or other of

these two goal structures suggests that these goals are mutually exclusive. Recent theorising and research, however, suggests that these are not dichotomous and that individuals may hold both mastery and performance goals, varying in salience, depending on the nature of the task, the school environment and the broader social and educational context of the institution (see e.g., Wentzel, 1991; Meece, 1991; Pintrich & Garcia, 1991). Furthermore, the reduction of a study of the importance and motivational impact of goals to mastery versus performance is particularly unsatisfactory when children from minority cultural groups are concerned, multiple goals of motivation need to be considered. One theoretical model which posits multiple goals for motivated action and which allows for the interacting effects of these goals is Maehr's Personal Investment Model (Maehr, 1984; Maehr and Braskamp, 1986). In its broadest interpretation the model conceptualises motivated behavior as being determined by three global variables: personal incentives (which I will refer to as multiple goals), sense of self and facilitating conditions.

Multiple goals of behavior in a situation refers to the motivational foci of activity; importantly what a person defines as 'success' and 'failure' in a particular situation. Maehr proposes four broad goal systems which are presumed to be universal: task goals (such as experiencing adventure, novelty or working to understand or improve at something), ego goals (such as doing better than others or leading the group), social solidarity goals (such as pleasing others and being concerned for others welfare) and extrinsic rewards goals (such as working for a recognition or a prize or reward of some kind). (See also Schwartz, 1990 for an interesting discussion of similar universal dimensions of motivation). Each of these goal structures impact upon an individual's sense of competence, sense of autonomy and sense of purpose in learning and contribute to the motivational orientation of the individual.

The second component of the model is defined by Maehr as sense of self, which refers to the more or less organized collections of perceptions, beliefs, and feelings related to who one is. Sense of self is presumed to be composed of a number of components such as sense of competence, sense of autonomy and sense of purpose, each contributing to the motivational orientation of the individual and interacting with the motivational goals outlined above. The third component, facilitating conditions refers to the behavioral alternatives that a person perceives to be available and appropriate (in terms of sociocultural norms and external factors such as geographic location and socio-economic status that exist for the individual) in a given situation.

The focus in this paper is an examination of the relevance and applicability of this wider goal theory model to Australian Aboriginal and Navajo Indian students in school settings.

The research reported here therefore addressed the following questions:

1. Are the dimensions of the Maehr model (multiple goals and sense of self) relevant to the Australian Aboriginal and Navajo groups?
2. What are the most important goals of Australian Aboriginal and Navajo motivation derived from this model and how do these relate to extant literature?
3. How do these goals relate to important criteria of school motivation such as school confidence, perceived value of school, affect to school, desired occupation after leaving school, GPA, absenteeism and intention to complete schooling?

Facilitating conditions have been discussed in a wide range of publications dealing with Australian Aboriginal and Navajo dropouts and will not be considered in this paper (see McInerney, 1989a; McInerney & McInerney, 1990; Platero et al, 1986 and Swisher, 1991; Watts, 1981). This research deals with the multiple goals and sense of self components of the model.

Method

Instruments

Parental surveys

At the outset I gathered qualitative data on how Australian Aboriginal people conceptualize education and what they perceive as major issues in the underachievement of Aboriginal children in school settings. The data were obtained in three ways: personal interviews and group discussions with members of the Aboriginal community; written survey forms distributed to Aboriginal parents, and an examination of existing reports relating to the area of inquiry. In all, over one hundred Aboriginal parents were interviewed and 106 completed a written survey form.

For the Navajo group, consultations were held with members of the community, the Navajo Division of Education and Indian Education Specialists (it was not possible to interview Navajo parents at the time of the study, although this is recognised as an important element for future work).

A very important strategy was to include Aboriginal and Navajo research assistants, who not only facilitated the access of the researcher to community groups, but who also contributed to the research by their clarification of issues raised by the respondents.

The results of these surveys are reported in McInerney (1988, 1989b; McInerney & Swisher, in press). This qualitative research established the relevance of the constructs: personal incentives, sense of self and facilitating conditions for the Aboriginal and Navajo communities.

Furthermore, the qualitative data obtained suggested the "content" of issues that were relevant to each group and therefore potentially useful at the local level.

Materials

The Inventory of School Motivation (ISM) was devised to reflect components of Machr's Personal Investment model and to investigate the nature of school motivation in cross cultural settings (McInerney, 1988, McInerney & Sinclair, 1991, 1992). The Inventory is broad enough to reflect the global dimensions of the model in a variety of cultural settings. Inventory questions relate to the following goals of the Personal Investment Model, each of which has two components: **Sense of Self**: sense of competence (e.g., I can do things as well as most people at school), sense of purpose (e.g., it is good to plan ahead to complete my schooling); **Ego**: competitiveness (e.g., winning is important to me), group leadership (e.g., I often try to be the leader of a group); **Extrinsic**: recognition (e.g., having other people tell me that I did well is important to me), token rewards (e.g., getting merit certificates would make me work harder at school); **Social Solidarity**: social concern (e.g., it is very important for students to help each other at school), affiliation (e.g., I try to work with friends as much as possible at school); **Task**: task involvement (e.g., the more interesting the school work the harder I try), and striving for excellence (e.g., I try hard to make sure that I am good at my schoolwork). The items were designed in collaboration with an Aboriginal Consultative group established by the then National Aboriginal Education Committee (NAEC) and the New South Wales Aboriginal Education Consultative Group (AECG) to oversee the research. Furthermore, trial runs on the questions were conducted with members of the Aboriginal community enrolled in University subjects taught by the researcher as part of the Aboriginal Rural Education Program. The instrument was also reviewed by members of the Navajo community and Indian Education Specialists. Minor changes were made to reflect the Navajo (and United States!) idiom. Items were scored using a Likert-type five point scale from 1 strongly agree to 5 strongly disagree.

The instrument was administered under standardized conditions. Aboriginal and Navajo assistants helped with the administration.

The samples

Four hundred and ninety six Aboriginal students were surveyed from Years 7, 8, 9, 10 and 11 from 12 high schools in New South Wales broadly typical of the types of country and city schools that Aboriginal children attend (e.g., Redfern, Matraville, Dubbo, Nowra, Wellington). Comparator Anglo and Migrant groups were included in the Australian study to further test the efficacy of the methodology (1172 Anglo students and 487 migrant background students). Five

hundred and twenty nine Navajo students from Grade 9 through to Grade 12 were surveyed at Window Rock High School, a large high school situated on the Navajo Reservation. This report focuses on the results of the Aboriginal and Navajo sample.

Research strategy

The following research strategy was used:

- 1). Design an instrument based on the theoretical model which effectively reflected key goals determined in presurveying to be relevant to the groups being studied;
- 2). Factor analyse the instrument (ISM) separately for each group to determine the construct validity of the scales and to determine the reliability of the scales (in effect, to establish the nature of the global variables and the content of the scales relevant to each group);
- 3). Use the derived scales as predictor variables in multiple regression analyses and discriminant analyses against a range of educationally relevant criterion variables (school confidence, perceived value of school, affect to school, desired occupation (Navajo only), school achievement, and absenteeism);
- 4). Determine the most salient goals within each group separately, and to draw comparisons across groups.

A major function of the analyses was to demonstrate the relationship between the predictor variables derived from the factor analyses of the ISM and the criterion variables within each group and to illustrate any cultural similarities and differences in the relative importance of the predictor variables. Comparisons between the groups are not based on mean scores derived from overall analyses of the instruments combining the full sample, as this would have presumed that all items were equally relevant to each group. Separate factor analyses for each group established which items were most relevant for later analyses. The results of the separate factor analytic studies are reported in McInerney & Swisher (in press) and McInerney & Sinclair, (1991, 1992).

Predictor variables

In order to be of use to educators working with Navajo and Aboriginal students, the scales derived from the ISM representing multiple goals need to be predictive of a range of school related intentions, behaviors and attitudes, e.g., quality of school work, attitudes towards school, intentions to complete various levels of school, progression through school, absenteeism and school retention among others. In order, therefore, to assess the validity and usefulness of the scales derived from the ISM for analysing Aboriginal and Navajo motivation in school settings a

series of multiple regression analyses was conducted to ascertain the relationship between the scales and various indicators of school performance and attitudes.

The predictor variables in the analyses were the scales drawn from the Inventory of School Motivation based on earlier factor analytic work (reported in McNerney & Swisher, in press; McNerney & Sinclair, 1991, 1992). Table 1 lists the predictor variables.

Insert Table 1 about here

Criterion variables

Seven criterion variables were used for the multiple regression analyses. Four of these, school confidence, affect to school, intention to complete school and perceived value of school were constructed scales based upon a five point Likert scale from strongly agree to strongly disagree. Items comprising these scales, and each scale's reliability estimate (Cronbach's alpha) are presented in Table 2. The final three variables were demographic, viz, desired occupation after leaving school (Navajo students only), elicited from the students at the time of the survey and graded on a six point scale based upon the occupational prestige of the nominated occupation; Grade Point Average (GPA) (Navajo Students) and English and Maths achievement (Aboriginal, Year Ten students) and days absence for the enrolment period in which the survey was conducted (drawn from school records).

Insert Table 2 about here

Results and Discussion

From the psychometric perspective the exploratory factor analyses of the Inventory of School Motivation have offered considerable empirical support to Maehr's Personal Investment Model (reported in McNerney & Swisher, in press; McNerney & Sinclair, 1991, 1992). The second phase of the study demonstrated the predictive power of the ISM. For each group studied the combined set of culturally determined predictor scales (multiple goals) developed from the personal investment theoretical framework were found to be significantly related to expectations about continuing with or leaving school, and a range of other demographic variables (such as school attendance and school achievement). Furthermore, the combination of significant goals involved varied between cultural groups on particular criteria, enabling comparisons and

contrasts to be drawn between each group. Tables 3 and 4 report the results of the multiple regression studies conducted and should be referred to throughout the following discussion.

Insert Tables 3 and 4 about here

In the following sections I wish to elaborate on the applied usefulness of the approach. While I believe that the reliability estimates are adequate for each of the predictor and criterion scales, the reader is cautioned to evaluate my findings (and interpretations) in the context of particular scale reliabilities.

The multiple goals of the Inventory of School Motivation have been able to suggest some of the key correlates of successful and unsuccessful performance for the students included in the study. Clearly, the application of a bipolar model of goals such as task versus ego goals would not have permitted the more fine grained analyses provided by the ISM.

Among the motivational goals considered in the literature to be most relevant to Australian Aboriginal and Navajo Indian students are those that relate to a collectivist community rather than an individualistic community. Hence social solidarity goals relating to affiliation and social concern are presumed to be more salient than ego goals such as competition and individual power. The literature says little about the relevance of other goal dimensions such as task or extrinsic rewards. In the next section I discuss the relevance of specific goals to a range of school related criteria. I will begin with task goals and deal with the others in turn.

Task goals

The task goal: striving for excellence in one's schoolwork is associated with communities that emphasize individualism rather than collectivism. The benchmark for achievement is an individual's performance, rather than the group's performance. Throughout the extensive literature consulted for this research it was consistently argued that both Australian Aboriginal and native American children work better under goal structures that emphasize group achievement. Allegiance is to the family and the community rather than to the self. In the context of the Navajo, children (and indeed adults) who excel in terms of personal achievement may be ridiculed and rejected within the tribe (see, e.g., Deyhle, 1989; McDonald, 1978; Yates, 1987). Indeed, the credentialing process (i.e., achieving certificates of individual achievement)

characterising school systems is thought to be hard to incorporate into the sharing concept because it is seen as individual and personal gain, with little applicability to other people in the community. While it is believed that self-direction and task orientation measured by the scale striving for excellence are more consonant with individualistic cultures, the present study clearly shows that both the Aboriginal and Navajo students surveyed are highly task oriented, and that the task goal: striving for excellence in one's schoolwork was an important predictor of a range of criteria viz, school confidence, affect to school and absenteeism for the Navajo children, and school confidence, perceived value, affect to school and intention to complete school for the Aboriginal children. Navajo children who strive for excellence in their schoolwork are more confident, like school more, and spend less days absent from school than their peers who score lower on this dimension. Aboriginal children who strive for excellence in their work are clearly more confident, value and like school more, and intend to complete school more than their peers.

Ego goals

In collectivist societies, such as the Australian Aboriginal and Navajo, it is generally believed that students possess a predisposition to work for cooperative rather than competitive goals in the school context, and that they withdraw from tasks that are highly competitive or likely to put them above their peers. It is believed that western schools stress performance goals such as competitiveness, and reinforce children for individualistic, competitive effort reflected through self-reliance, individual striving, and the surpassing of others. Because of this focus on performance goals schools are thought to alienate Aboriginal and Navajo students and to be culturally inappropriate (see e.g., Davies & McGlade, 1982; Swisher & Deyhle, 1989). Evidence from this study suggests that the ego goal: competitiveness is not a significant goal determining either the Aboriginal or Navajo children's attitudes to schooling and achievement, although it predicts level of school confidence for the Aboriginal group.

The ego goal: power/group leadership, refers to an individual's need to function in a position of authority through leading a group. Schwartz (1990) suggests that social power values might appear to be more important to the average person in collectivist societies. This is because, where status relations are ascribed, power differences are more likely to be seen as part of the legitimate social structure and hence as less open to challenge. Schwartz goes on to suggest that there is more individual striving for power in individualistic societies because status can

legitimately be sought and attained through effort. Power itself may not be more valued, however, because achieved statuses do not have permanent legitimacy and the exercise of power is a source of conflict. Interestingly, this author suggests that blatant power seeking in individualistic communities may be negatively valued because it threatens others' independence and contractual arrangements. Deyhle (1989) suggests that authority relations are egalitarian among Navajo as opposed to hierarchical among anglos. Some authors maintain that power seeking is inimical to both Aboriginal and Navajo students, while others maintain that this quality is one that distinguishes the successful indigenous student from the unsuccessful student. This study gives support for both contentions. For the Navajo group power/group leadership is significantly related to school confidence and desired occupation. Those students who are more power/group leadership oriented have higher school confidence and desire higher occupations after leaving school. It is a significant negative predictor for the Aboriginal group for perceived value of school. It would appear that those Aboriginal students who value school more are less group leadership oriented. However, group leadership is positively related to school confidence. The more leadership oriented the Aboriginal student the more confident they felt at school.

Social solidarity goals

The social solidarity goal: affiliation is commonly thought to be a powerful motive for collectivist societies. Deyhle (1989; see also Hughes, 1984; Watts, 1981) suggests that two apparently opposing concepts function within Navajo culture. The autonomy of the individual regarding possessions and actions is strongly maintained while at the same time the consensus and cooperation of the group is desired. Appropriate cooperative behaviour is encouraged but individualistic behaviour is respected without overt punishment. While affiliation was clearly identified through factor analysis of the Inventory of School Motivation as a motivational goal for both groups there is no evidence from any of the multiple regression analyses that it is as potent a motive as the literature would suggest. In fact, affiliation is not a significant predictor for any of the criterion variables. The argument, therefore, that if schools could adopt strategies which call upon the affiliative drive of Aboriginal and Navajo children, such as cooperative learning and group work, then these children would be more motivated to learn is not supported by the data.

It is also commonly argued that, because of early socialisation practices, Navajo and Aboriginal children place a high value on social relationships with their family and peer group.

and that this is a major factor in their orientation to learning. There is some support for the importance of this variable for Navajo children. Social concern is significantly related to how much children like school, with those strongly agreeing with the dimension also liking school more. Social concern is also related to intention to complete schooling with those expressing strong social concern being more likely to have the intention to complete schooling. Social concern was a significant predictor of achievement in English for the Year Ten Aboriginal group. Students who scored more highly on this scale also performed better academically

Extrinsic goals

Some authors believe that Navajo and Aboriginal children need greater recognition from the teacher in order to work well at school. There is again some support for the importance of this variable for the Navajo children, however, in a converse way to expectations. Recognition was significantly and negatively related to the intention to complete school. It would appear that, for those children intending to complete school such recognition as indicated by the scale is not important. To the extent children strongly agreed with the intention of completing school, they strongly disagreed with the need for recognition! Recognition was not an important variable for the Aboriginal group, although it was a significant negative predictor of perceived value of school. In other words those Aboriginal students who placed a high value on schooling did not require teacher recognition. It might also be noted that the direction of the prediction for completing school was in the same direction as for the Navajo group.

Sense of self

Sense of competence relates to an individual's self-concept for the task of learning, how one assesses one's capacity to learn. Extensive research literature is concerned with self-efficacy and its effects on motivation. It is believed that the degree to which an individual feels competent in an endeavour will directly influence level of motivation and performance in that endeavour (see e.g., Covington, 1992; Schunk, 1990). It is also believed that Navajo and Aboriginal children lack a sense of competence in the school setting and that this explains, to a large extent, their poor motivation and performance. There is strong evidence that sense of competence is a major determinant of motivation for both the Navajo and Aboriginal students.

For the Navajo student sense of competence is a significant predictor of school confidence, affect to school, grade point average, desired occupation after leaving school and absenteeism. To the extent that Navajo children believe they lack competence they are not confident at school, dislike school, have limited occupational aspirations, have high absenteeism and lower grade point averages. The converse applies.

Sense of competence (represented by three predictor variables) is a strong predictor of the Aboriginal child's attitude towards continuing with or leaving school, and in a follow-up study was able to discriminate between those students who had stayed on at school and those who had left prior to finishing the final high school year (McInerney, 1992b). Sense of competence is also significantly related to absenteeism, the perceived value of school, and affect to school. Aboriginal students who felt more competent had less absenteeism, and liked and valued school more than those who felt they were less competent.

It is suggested in much of the literature dealing with Navajo and Aboriginal people that they are present and past oriented rather than future oriented; in other words in the context of this study, they are not goal directed. McDonald (1978, p. 81) puts it this way " [In Indian culture] there is virtually no concept of saving for a rainy day, or hardly any other futuristic goals and objectives ... from the standpoint of the Indian student drop-out, it makes it very difficult to pressure him to come to class, work hard, and get good grades for some futuristic goal which is really unimportant and of questionable value. Indian values preclude the concept of sacrifice and training for a future end. It is very easy to see then that the student from the reservation is difficult to motivate when standard traditional academic values are assumed, because those values simply are not self-motivating for the Indian student." (See also Rhodes, 1989).

My results show quite the contrary. Indeed both Aboriginal and Navajo students are highly goal directed. Furthermore, the goal directed dimension, sense of purpose, strongly predicted a range of criterion variables. Those Navajo students who had a strong sense of the purpose of schooling perceived the value of school more highly, had the intention of completing school, desired more prestigious occupations after leaving school and had a higher grade point average than those who were lower on this dimension. The second sense of purpose component (sense of purpose for the future) was significantly related to perceived value of school and the intention to complete schooling.

For the Aboriginal students sense of purpose was strongly related to their attitudes towards continuing with school, and clearly discriminated between school stayers and leavers. Aboriginal children who had a strong sense of purpose for their schooling valued and liked school significantly more than their peers and had greater school confidence.

Clearly those Navajo and Aboriginal students who set goals and see a purpose in their schooling are among the more successful students.

Summary

My research has demonstrated that the multiple motivational goals drawn from the Personal Investment Model have applicability and relevance for the Aboriginal and Navajo students surveyed. Furthermore, the Inventory of School Motivation has been able to suggest combinations of goals together with sense of self variables that appear most useful in predicting student performance and attitudes across a number of important school criteria.

Demonstrably important variables in predicting school students' retention, academic performance, valuing of school, and affect to school, are sense of self variables viz, the students' sense of competence, and sense of purpose, and the task goal. Group leadership and social concern also appear to be important. Factors which have been considered important by many as key determinants of Australian Aboriginal and Navajo children's poor achievement and dropping out of school, such as the supposed mismatch between the school's goals of competitiveness, individuality, and extrinsic rewards and the children's goals of affiliation, cooperation and non-competitiveness, were not supported by the findings. Affiliation and competitiveness were not significantly related to any of the criterion variables for the Navajo group. Competitiveness did predict school confidence for the Aboriginal group, but no other criterion, while affiliation was not related to any criterion variables.

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Table 1

Dimensions of relevance to Australian Aboriginal and Navajo Indian students drawn from the Personal Investment Model

PERSONAL INCENTIVES	
Task	Task Involvement ⁺ Striving for excellence
Ego	Competitiveness Power/group leadership
Social Solidarity	Affiliation Social Concern
Extrinsic Rewards	Recognition Token Rewards*
SENSE OF SELF	
	Sense of Purpose** Sense of Competence++

NOTE:

+ This component loaded on the striving for excellence dimension for the Aboriginal group.

++ The sense of competence items constructed three factors for the Aboriginal group: (+) sense of competence; (-) sense of competence and school competence.

* Items related to this construct did not load in any systematic way and were deleted from the ISM for the Navajo group.

** The sense of purpose items constructed two factors for the Navajo group: sense of purpose for future career and sense of purpose for school.

Table 2**Items, means, standard deviations and reliability estimates (Cronbach's alphas) for criterion variables.**

VARIABLE	alpha	M	sd
SCHOOL CONFIDENCE	.53 (.56)a	2.33 (2.73)	.65 (.75)
I am very confident at school			
I think I can do quite well at school			
I succeed at whatever I do at school			
AFFECT TO SCHOOL	.46 (.51)	2.11 (2.63)	.74 (.95)
I hate learning or studying or any type			
I like working at school			
INTENT TO COMPLETE SCHOOL	.71 (.88)	1.17 (2.67)	.37 (1.16)
I intend to complete High School			
School students should complete high school			
I'm the kind of person who would complete High School			
Personally I feel that I should complete High School			
PERCEIVED VALUE OF SCHOOL	.69 (.71)	1.5 (2.13)	.46 (.71)
If I do well at school I am more likely to get a good job			
I think that it is really important to do well at school			
If I work hard at school I'll probably do better than parents			
Some people need education for their jobs,			
but for most of us it is a waste of time			
Doing well at school is important to my future			
My friends tell me to leave school and go on welfare			
I don't care if I get a job or not			

Note: Negative items were reverse scored

a = Aboriginal descriptives are in brackets

Table 3

Sets of standardised beta weights and multiple regression coefficients for each criterion variable for Navajo Indian Group (n = 529)

Predictor variables	Criterion variables							alpha
	School confidence	Perceived value	Affect to school	Desired occupation	GPA	Absence	Intention complete	
Task Involvement	058	005	088	127*	038	<u>083</u>	040	.53
Striving for excellence	396**	067	285**	043	<u>027</u>	211**	109	.82
Competition	037	040	<u>002</u>	003	<u>009</u>	021	047	.77
Group leadership	151**	002	028	<u>155**</u>	018	016	<u>009</u>	.78
Affiliation	004	025	<u>053</u>	<u>031</u>	<u>015</u>	<u>022</u>	074	.65
Social concern	<u>057</u>	091	254**	012	<u>067</u>	<u>038</u>	112*	.69
Recognition	023	047	<u>067</u>	<u>026</u>	069	<u>065</u>	<u>145*</u>	.83
Sense of purpose (F)	<u>033</u>	355**	018	022	<u>041</u>	<u>077</u>	615**	.79
Sense of purpose (S)	089	168**	033	146*	<u>160**</u>	056	151**	.65
(-) Sense of competence	<u>229**</u>	<u>054</u>	<u>200**</u>	<u>167**</u>	277**	<u>126*</u>	080	.70
Age							387*	
IAV7							<u>744**</u>	
MULT R	586**	574**	551**	329**	385**	243**	462**	
R square	343**	329**	304**	108**	149**	059**	214**	

Note: Beta weights are presented without decimal points. Negative beta weights are underlined. Results for the intention scale are presented for the backwards elimination of variables when all variables are entered into the equation including interaction terms for an age effect on this variable.

* p<.05 **p<.01

Table 4

Sets of standardised beta weights and multiple regression coefficients for each criterion variable for the Aboriginal group (n=496)

Predictor variables	Criterion variables							alpha
	School confidence	Perceived value	Affect to school	Maths achievement ^a	English achievement ^a	Absence	Intention complete	
Striving for excellence	305**	628**	412**	<u>086</u>	<u>006</u>	142	104*	.92
Competition	131**	077	<u>086</u>	009	186	102	<u>018</u>	.72
Group Leadership	109*	<u>085*</u>	049	<u>035</u>	<u>221</u>	<u>061</u>	<u>034</u>	.61
Affiliation	057	<u>068</u>	<u>021</u>	065	<u>009</u>	048	<u>042</u>	.70
Social Concern	<u>017</u>	017	<u>017</u>	221	469**	046	004	.72
Recognition	067	<u>095*</u>	018	<u>004</u>	<u>163</u>	026	<u>076</u>	.75
Token Rewards	007	<u>050</u>	<u>015</u>	<u>054</u>	<u>047</u>	<u>066</u>	019	.85
Sense of Purpose (S)	133**	188**	212**	242	085	058	662**	.73
(+) Sense of Competence	238**	<u>117**</u>	<u>007</u>	<u>006</u>	078	008	013	.58
(-) Sense of Competence	<u>157**</u>	034	<u>034</u>	<u>166</u>	<u>130</u>	<u>034</u>	034	.54
School Competence	064	064	253**	<u>084</u>	106	<u>115*</u>	127**	.53
MULT R	662**	715**	593**	370	552**	241*	735**	
R Square	438**	511**	352**	137	305**	058*	540**	

Note: Beta weights are presented without decimal points. Negative beta weights are underlined.

*p<.05 **p<.01

^a Academic achievement in maths and English were only available for the Year Ten students. Owing to the reduced n=85 and the skewed distribution towards poorer academic performance, these results should be interpreted with caution.